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Outline Construction Waste Management Plan

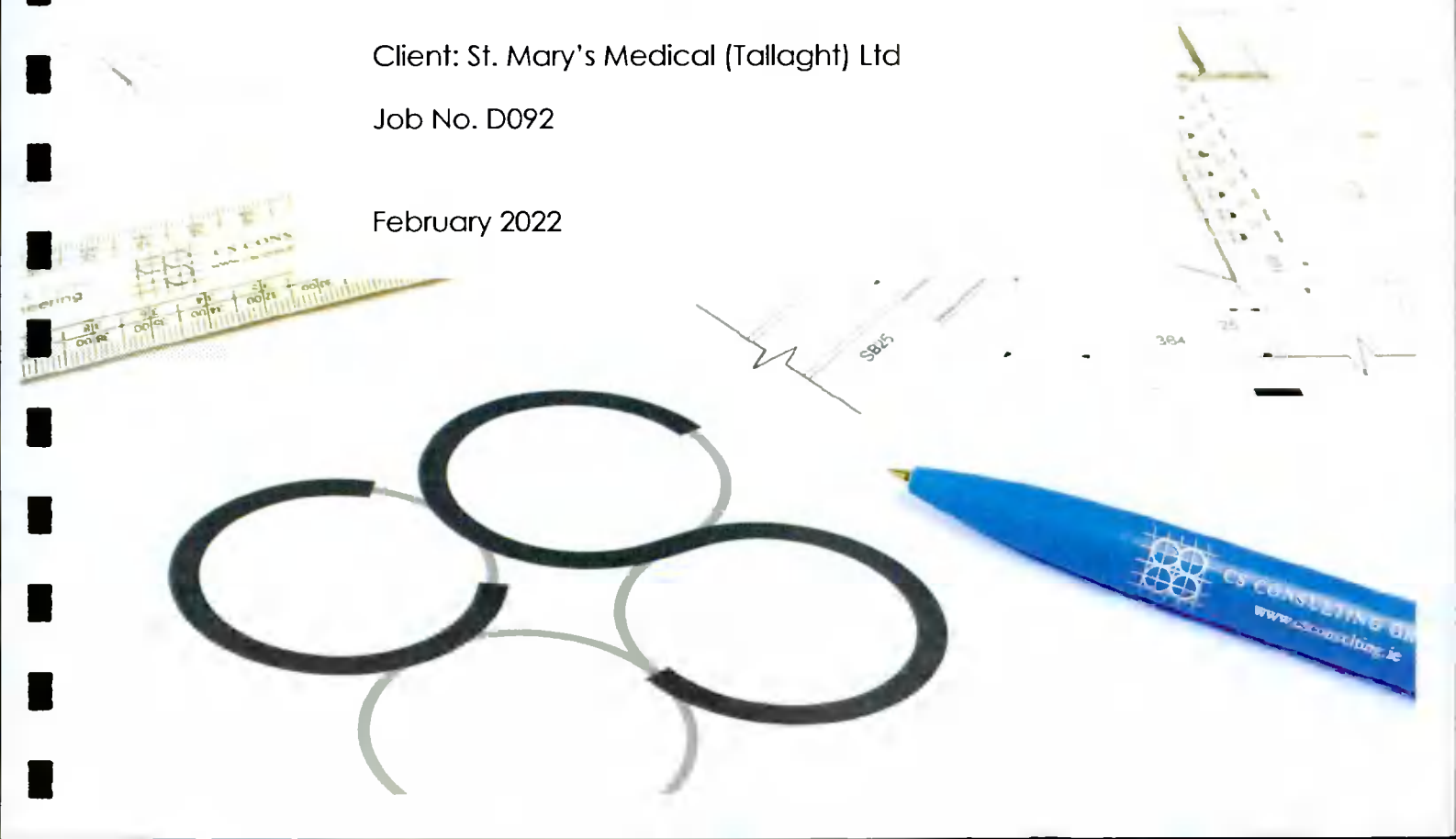
Nursing Home Development

St. Mary's Priory, Old Greenhills Road, Tallaght, Dublin 24

Client: St. Mary's Medical (Tallaght) Ltd

Job No. D092

February 2022



OUTLINE CONSTRUCTION WASTE MANAGEMENT PLAN

NURSING HOME DEVELOPMENT, ST. MARY'S PRIORY, OLD GREENHILLS ROAD, TALLAGHT, DUBLIN 24

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1.0 INTRODUCTION

Cronin & Sutton Consulting (CS Consulting) have been commissioned by St Mary's Medical (Tallaght) Ltd to prepare an Outline Construction Waste Management Plan to accompany a planning application for a proposed nursing home development within the grounds of St. Mary's Priory, Tallaght, Dublin 24.

The Outline Construction Waste Management Plan includes a description of the proposed works and how these works will be managed for the duration of the works on site. This plan will be updated by the contractor and agreed with South Dublin County Council (by the appointed Contractor) in advance of the construction phase.

The project will be under the control of a main contractor who will be appointed after the approval is granted for the Project Application. Upon appointment and once familiar with the site and having developed a final detailed methodology for the construction of the Development Project, the contractor will prepare a Detailed Construction Management Plan. It is anticipated the detailed plan will be based upon this plan. This outline construction waste management plan (OCWMP) is a preliminary plan which has been prepared to give an outline of the processes to be employed during construction of this project. Prior to the on-site activities commencing, this plan will be revised by the contractor and expanded to provide a project specific site management plan, incorporating:

- Operational Health & Safety (OH&S) Management Plan;
- Environmental Management Plan including a Waste Management Plan;
- Pedestrian and Traffic Management Plan.

The Construction Management Plan will be integrated into and implemented throughout the construction phase of the project to ensure the following:

- That all site activities are effectively managed to minimise the generation of waste and to maximise the opportunities for on-site reuse and recycling of waste materials.
- To ensure that all waste materials generated by site activities, that cannot be reused on site, are removed from site by appropriately permitted waste haulage contractors and that all wastes are disposed of at approved waste licensed / permitted facilities in compliance with the Waste Management Act 1996, the Waste Management (Amendment) Act 2001 and the Protection of the Environment Act 2003.
- To manage and control any environmental impacts (noise, vibration, dust, water) that project construction work activities may have on receptors and properties that are located adjacent to project work areas and on the local receiving environment.
- To comply with planning conditions and requirements relating to waste management as required by South Dublin County Council.

The proposed Outline Construction Waste Management Plan has been prepared to demonstrate how the appointed contractor and the appointed Project Supervisors will comply with the following relevant legislation, and relevant Best Practice Guidelines:

- Integrated Pollution Prevention and Control Directive (1996/61/EC)
- The Waste Framework Directive (Directive 2008/98/EC)
- Environmental Protection Agency Act 1992,
- Waste Management Act 1996, the Waste Management (Amendment) Act 2001 and the Protection of the Environment Act 2003.
- Waste Management (Collection Permit) (Amendment)(No.2) Regulations 2016.
- Waste Management (Permit) Regulations 1998 (SI No. 165 of 1998)
- Department of the Environment, Heritage and Local Government – Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects – June 2006

- Local Government Water Pollution Act 1977

This Outline Construction Waste Management Plan presents the potential environmental impacts and proposed management and monitoring methodologies based on the concept of Best Practice and the proposed mitigation measures to be implemented at the site.

2.0 SITE LOCATION

The proposed development site is located within the grounds of St. Mary's Priory, on the western side of the Old Greenhills Road in Tallaght, Dublin 24. The site is located in the administrative jurisdiction of South Dublin County Council and has a total area of 0.99ha.

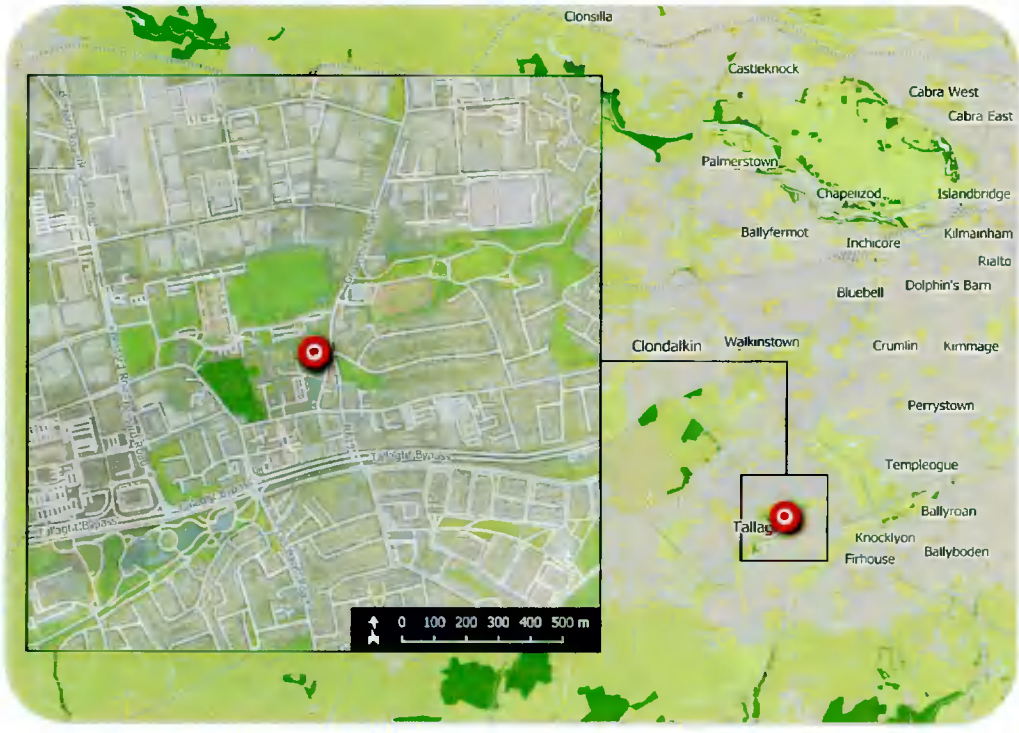

Figure 1 – Location of proposed development site
(map data & imagery: EPA, NTA, OSM Contributors, Google)

The location of the proposed development site is shown in Figure 1 above; the indicative extents of the development site, as well as relevant elements of the surrounding road network, are shown in more detail in Figure 2

The site is bounded to the north by the TU Dublin Tallaght campus, to the east by Old Greenhills Road and Greenhills Road, and on other sides by the

remaining grounds of St. Mary's Priory. The site has street frontage of approx. 95m on Old Greenhills Road and approx. 50m on Greenhills Road.

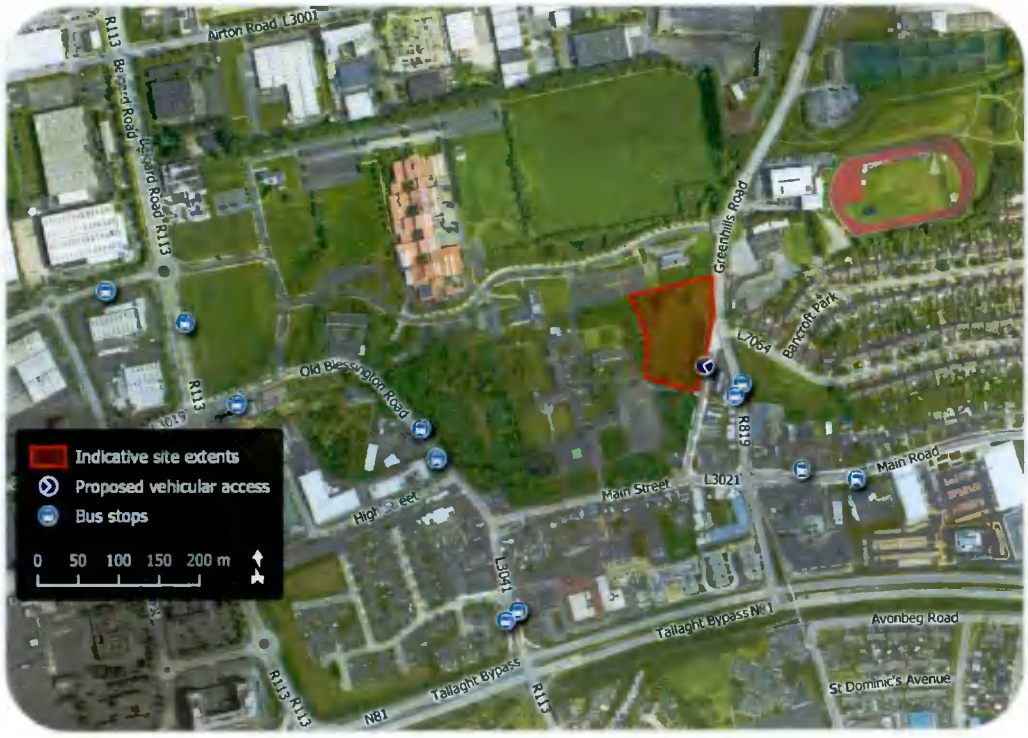

Figure 2 – Site extents and environs
(map data & imagery: NTA, OSM Contributors, Google)

2.1 EXISTING LAND USE

The subject site is greenfield, forming part of the grounds of St. Mary's Priory.

2.2 PROJECT DESCRIPTION

The proposed development consists of:

(a) construction of a 4 storey nursing home building consisting of (i) 106 no. bedrooms (with ensuite); (ii) associated resident's welfare facilities; (iii) administration areas and staff facilities; (iv) with multi-function space; and pharmacy proposed at ground floor level;

(b) construction of 60 no. one bed independent living units in 3 no blocks as follows: (1) Block A, a 4 story building comprising 11 no. one-bed units; (2) Block B, a part 4/part 5 storey building comprising 35 no. one-bed units; and (3) Block C, a 5 storey building comprising 14 no. one-bed units. Each unit will be provided with private open space in the form of a balcony/terrace (6sq.m).

(c) The development will include communal open space and landscaping (including new tree planting and tree retention), 30 no. car parking spaces (including 3 no. limited mobility parking spaces; 3 no. EV parking spaces and 1 no. car sharing spaces); and 37 no. bicycle parking spaces.

(d) The development will be served by a new pedestrian and vehicular access from Old Greenhills Road through existing boundary wall. Material from the removed wall will be repurposed within the landscape areas; and

The development includes landscaping, boundary treatments (including walls and railings to southern and western boundaries), an ESB Substation, SuDS drainage; road infrastructure and all ancillary site works necessary to facilitate the development.

3.0 LOGISTICS

3.1 Construction Program & Phasing

Subject to a successful grant of planning, it is intended for the works to commence in Q3 2022. The proposed development is anticipated to be constructed over an 18-month period.

The development is proposed to be constructed on the following basis;

- Set up site perimeter hoarding, maintaining existing pedestrian and traffic routes around the site;
- Site Clearance;
- Reduced Level excavations;
- Site services installations (drainage, power, water and the like);
- Construct Building Frame and Envelope;
- Renovation works to an Existing Building;
- Finish Interior and Exterior Landscaping

3.2 Vehicular Access to Site

The site is currently accessed from Old Greenhills Road. It is anticipated that for the duration of the works all access and egress for deliveries will be via the existing access point from Old Greenhills Road.

Security personnel will be present at the entrance/exit of the site to ensure all exiting traffic will do so safely. A wheel wash will be installed at the exit from the site to prevent any dirt being carried out into the public road. If necessary, road sweeper will be used to keep public road around the site clean.

3.3 Protection of Public Areas from Construction Activity

Perimeter hoarding will be provided around the site to provide a barrier against unauthorized access from the public areas. Controlled access points to the site, in the form of gates or doors, will be kept locked for any time that these areas are not monitored (e.g. outside working hours).

The hoarding will be well-maintained and will be painted. Any hoardings may contain graphics portraying project information.

3.4 Site Security

The site will be secured with a solid hoarding 2.4m high.

The site hoarding will be branded using the appointed Contractors logos etc. Some marketing images or information boards may also be placed on the hoarding.

Access to site will be controlled by means of an electronic access control system and camera remote monitoring system for out of hours.

During working hours, a gateman will control traffic movements and deliveries.

All personnel working on site must have a valid Safe Pass card.

The Contractor will ensure the presence of site security staff at all times on the site.

3.5 Material Hoisting & Movement Throughout the Site

It is envisaged that a tower crane will be erected on site to assist with superstructure and exterior works. In addition to the tower crane, separate mobile crane visits may be required from time to time. These visits will be coordinated with the other site activities and crane operations to ensure all risks are correctly assessed and mitigated against.

Hoists and teleporters may also be utilised around the perimeter as required during the project to facilitate material movement into the structures and waste movements out of the buildings. With the commencement of the fit-out activities, hoists strategically positioned will play a key role for successful project delivery. They are also less susceptible to being affected by inclement weather conditions.

A permanent odometer will be installed on the site tower cranes which will pass wind speed data to the site office and to the Contractor's management team in their head office to monitor compliance with safe lifting practices.

3.6 Deliveries & Storage Facilities

It is proposed that unloading bays are provided for deliveries to the site within the hoarding perimeter. They should be accessible by tower crane and fork lifts. Appropriately demarcated storage zones will be used to separate and segregate materials.

All deliveries to site will be scheduled to ensure their timely arrival and avoid need for storing large quantities of materials on site. Deliveries will be scheduled outside of rush traffic hours to avoid disturbance to pedestrian and vehicular traffic in vicinity of the site.

3.7 Site Accommodation

On-site facilities will consist of;

- Materials storage area;
- Site office & Meeting Room;
- Staff welfare facilities i.e. toilets, drying room, canteen, etc.
- Due to the nature of the site, site accommodation may be located in the existing convent building.

Electricity will be provided to the site via national grid.

Water supply to the site will be provided by means of a temporary connection to the public water main. Similarly, a temporary connection for foul water drainage will be made to the public network.

3.8 Site Parking

There will be limited on-site parking for staff and visitors. Nearby off-site car parking will also be identified to avoid congestion in the surrounding areas.

Construction staff will also be encouraged to use public transport and information on local transportation will be published on site

3.9 Site Working Hours

Construction operations on site will generally be subject to a planning permission and conditions. However, it may be necessary for some construction operations to be undertaken outside these times, for example; service diversions and connections, concrete finishing and fit-out works, etc.

Deliveries of materials to site will generally be between the hours of 07:00 and 19:00, Monday to Friday, and 08:00 to 14:00 on Saturdays. There may be occasions where it is necessary to make certain deliveries outside these times, for example, where large loads are limited to road usage outside peak times.

4.0 ENVIRONMENTAL ISSUES

4.1 Noise

Noise monitoring will be established on site throughout the project. Noise monitoring shall be carried out for a period of at least 2 weeks prior to any works commencing, in order to establish a baseline, and communicating the results to South Dublin County Council in the form of baseline reports.

Variation of noise levels from those experienced as part of everyday life in an area can result in extreme disruption, in particular at this sensitive site adjacent to residential areas. The Contractor shall implement measures to eliminate where possible and reduce noise levels where not.

All construction activities will be carried out in compliance with the recommendations of BS 5228, "Noise Control on Construction and open sites part 1 and comply with BS 6187 Code of Practice for Demolition. These measures are employed to ensure compliance will include:

- Noise monitoring stations, which will be monitored daily, will be located on site and at recommended locations in the vicinity of the site to record background and construction noise activity.
- The best means practical will be used to minimize the noise produced by all on site operations.
- Proper maintenance of all operating plant to ensure noise emission compliance.
- All operating plant will be selected on the basis of incorporating noise reducing systems, and at a minimum be fitted with effective exhaust silencers.
- Compressors will be fitted with acoustically lined covers, which will remain closed while the machines are in operation.

- Plant such as pumps and generators which are required to work outside of normal working hours will be enclosed with acoustic enclosures.
- There will be strict adherence to the site working hours stipulated in the Planning Conditions.

4.2 Air Quality & Dust Monitoring

Dust prevention measures shall be included for control of any site airborne particulate pollution. The Contractor shall monitor dust levels in the vicinity of the site using a Bergerhoff gauge instrument or in accordance with SDCC Planning conditions. Records shall be kept of such monitoring for review by the Planning Authority. The minimum criteria to be maintained shall be the limit for Environmental Protection Agency (EPA) specification for licensed facilities in Ireland, which is 350mg/m2/day.

The Contractor shall continuously monitor dust over the variation of weather and material disposal to ensure the limits are not breached throughout the project. It is proposed to use a "Dust Boss" spray cannon machine in order to contain dust on site. The cannon is capable of spraying a water mist up to 45m and has been used in Dublin during the demolition of buildings up to 8 storey's in height. This dust suppression method is very successful in containing dust on-site. The machine has a range of controls and adjustability to accurately target sources of dust generated from works.

4.3 Migrating Dust & Dirt Pollution

The Contractor will ensure that all construction vehicles that exit the site onto the public roads will not transport dust and dirt to pollute the external roadways. This will be achieved through a combination of the following measures:

- Ensuring construction vehicles have a clean surface to travel on within the site (i.e. haul road)

- Ensuring all construction vehicles are inspected by the gateman for cleanliness prior to exiting the site
- Providing a "Full-Body Self Contained" wheel wash shall be constructed and located within the site confines
- Ensuring an appropriate wheel or road washing facility is provided as and when required throughout the various stages of construction on site. If conditions require it then a manned power washer shall be put in place to assist the wheel wash system
- A dedicated road sweeper shall be retained for the duration of the haulage works; and Water supplies shall be recycled for use in the wheel wash. All waters shall be drained through appropriate filter material prior to discharge from the site

The use of appropriate water-based dust suppression systems will greatly reduce the amount of dust and windborne particulates as a result of the construction process. This system will be closely monitored by site management personnel particularly during extended dry periods and in accordance with site management methods.

4.4 Harmful Materials

Harmful material will be stored on site for use in connection with the construction works only. These materials will be stored in a controlled manner. Where on-site facilities are used there will be a bunded filling area using double bunded steel tank at a minimum.

4.5 Vibration

The Contractor shall provide and maintain vibration monitoring equipment for the duration of the works. Condition surveys of adjoining buildings will be

required before works commence. Vibrations shall be monitored in accordance with BS 7385-1:1990

A vibration monitoring system is to be put in place prior to any works taking place. This system is to raise an alarm if an agreed limit is exceeded at which time the working methods are to be adjusted so as to reduce vibrations generated.

5.0 WASTE MANAGEMENT

5.1 Responsibility for Construction Phase Waste Management

A suitably competent and experienced representative of either the client or the lead contractor will be nominated as Construction & Demolition (C&D) Waste Manager for the project. The function of the C&D Waste Manager is to communicate effectively the aims and objectives of the Waste Management programme for the project to all relevant parties and contractors involved in the project, for the duration of demolition and construction works on site.

The C&D Waste Manager will be assisted in this role by the external Safety Consultant. Site Inspections will be carried out on a weekly basis and will incorporate inspection and monitoring of the requirements of the Waste Management Plan.

5.2 Responsibility for Operational Phase Waste Management

Upon completion of the development, a Management Company shall be constituted, with the remit to provide and maintain common areas and communal facilities within the development, including communal waste collection and segregation facilities. The Management Company shall prepare an Operational Waste Control Strategy for the development, which shall detail specific operational arrangements for these.

Waste generated during the development's operational phase shall consist primarily of domestic waste. Communal facilities for the separation of recyclable waste streams shall be maintained by the Management Company.

5.3 CONSTRUCTION WASTE GENERATED BY THE PROPOSED DEVELOPMENT

5.3.1 Construction Waste Classification

Waste generated during construction at a typical site includes the following:

- Concrete, bricks, tiles, and cement
- Wood
- Glass
- Plastics
- Bituminous mixtures, coal tar, and tarred products
- Metals (including their alloys)
- Soil and stones
- Insulation materials (possibly including asbestos-containing materials)
- Gypsum-based construction material
- Materials containing mercury
- PCB-containing materials (e.g. sealants, resin-based floorings, capacitors, etc.)
- Waste electrical and electronic equipment
- Oil wastes and waste of liquid fuels
- Batteries and accumulators
- Packaging (paper/cardboard, plastic, wood, metal, glass, textile, etc.)

The EPA issued the European Waste Catalogue (EWC) in January 2002 and this system is used to classify all wastes and hazardous wastes according to a consistent EU-wide system. The EWC classification for typical waste materials to be expected to be generated during construction of the subject development is given in Table 1 below.

Table 1 - European Waste Catalogue

Waste Material	EWC Code
Non-Hazardous	
Concrete, bricks, tiles, ceramics	17 01
Wood, glass and plastic	17 02
Bituminous mixtures, coal tar and tarred products	17 03
Metals (including their alloys)	17 04
Soil, stones and dredged spoil	17 05
Gypsum-based construction material	17 08
Hazardous	
Electrical and Electronic Components	16 02
Batteries	16 06
Wood Preservatives	03 02
Liquid Fuels	13 07
Soil and stones containing dangerous substances	17 05 03
Insulation materials containing asbestos	17 06 01
Other insulation materials consisting of or containing dangerous substances	17 06 03
Construction materials containing asbestos	17 06 05
Construction and demolition waste containing mercury	17 09 01
Construction and demolition waste containing PCBs	17 09 02
Other construction and demolition wastes containing dangerous substances	17 09 03

5.3.2 Waste Management and Mitigation Measure

The following measures are proposed to ensure effective management of construction waste at the development site, to maximise recycling of construction waste, and to minimise the environmental impact of construction waste.

- On-site segregation of all waste materials into appropriate categories, including:
  - top-soil, sub-soil, bedrock;
  - concrete, bricks, tiles, ceramics, plasterboard;
  - asphalt, tar, and tar products;

- metals;
- dry recyclables (e.g. cardboard, plastic, timber).

- All waste material will be stored in skips or other suitable receptacles in a designated waste storage area on the site.
- Wherever possible, left-over material (e.g. timber cut-offs) and any suitable demolition materials shall be reused on or off site.
- Uncontaminated excavated material (top-soil, sub-soil) will be reused on site in preference to the importation of clean fill, as soil to be reused or removed from site must be tested to confirm its contamination status and subsequent management requirements.
- All waste leaving the site will be transported by a suitably licensed/permitted contractor and taken to a licensed/permitted facility.
- All waste leaving the site will be recorded and copies of relevant documentation retained.

These measures are intended to ensure that the waste arising from construction of the proposed development is dealt with in compliance with the provisions of the Waste Management Acts 1996 to 2013, the Litter Act of 1997, and the Eastern-Midlands Region (EMR) Waste Management Plan 2015-2021, achieving optimum levels of waste reduction, re-use and recycling.

5.3.3 Predicted Impacts of the Proposed Development

Waste materials will be generated during the construction of the proposed development, including the initial site clearance and excavation. Careful management of these, including segregation at source, will help to ensure maximum recycling, reuse and recovery is achieved, in accordance with current local and national waste targets. It is expected, however, that a certain amount of waste will still need to be disposed of at landfill.

Given the provision of appropriate facilities, environmental impacts (e.g. litter, contamination of soil or water, etc.) arising from waste storage are expected to be minimal. Particular attention must be given to the appropriate management of any construction waste containing contaminated or hazardous materials. The use of suitably licensed waste contractors will ensure compliance with relevant legal requirements and appropriate off-site management of waste.

In summary, with a high level of due diligence carried out at the site, it is envisaged that the environmental impact of the construction phase of the proposed development will be of small scale and short duration, with respect to waste management.

5.4 Operational Waste Generated by The Proposed Development

Municipal waste comprises household waste as well as commercial and other waste that, because of its nature or composition, is similar to household waste. It excludes municipal sludges and effluents. In the context of this report, municipal waste consists of three main elements: household, commercial (including non-process industrial waste), and street-cleansing waste (street sweepings, street bins and municipal parks and cemeteries maintenance waste, electoral campaign material).

Total municipal waste generation has continued to decrease from a peak in 2007, with municipal waste generated 21% lower in 2012 compared with 2007. Municipal waste generated per capita has decreased from 0.78 tonnes per person in 2007 to 0.59 tonnes per person in 2012. These decreases are linked to declining personal consumption as the economy contracted over the period 2007 to 2012 and occurred despite an increase in population over the same period. In addition, they also indicate a trend towards improved waste prevention in the country. Significantly, 2012 was the first year that the

percentage of municipal waste recovered (59%) exceeded the percentage disposed of (41%).

Typical municipal waste streams are expected to be produced during the operation of the proposed development. These include:

- food waste;
- cardboard and paper;
- plastics (including bottles and other containers);
- glass (including green, brown, and clear);
- metals (including aluminium cans and tin cans).

Periodic maintenance and repair activities will generate small quantities of wastes such as green waste, inert building materials (e.g. textiles) and certain chemicals (cleaning products, paints, pesticides, etc.).

5.4.1 Development Waste Disposal

An Operational Waste Control Strategy will be developed by the development Management Company to clearly outline the approach to waste disposal, and dedicated waste collection areas shall be established within common areas of the development. The waste will be segregated at the waste collection areas into the following categories:

- cardboard/paper;
- mixed non-recyclable waste;
- plastic;
- glass;
- metals;
- organic (food) waste;
- electrical waste.

Bins/containers will be clearly labelled and colour-coded, to avoid cross contamination of the different waste streams. Signage will be posted above or on the bins to show exactly which wastes can be put in each.

The Management Company shall make arrangements for the disposal of all waste collected within the development.

5.4.2 Waste Management and Mitigation Measures

In order to minimise the disposal of waste material to landfill, the principles of "reduce, reuse, recycle" will be promoted throughout the development. In addition, the following mitigation measures will be employed:

- Suitable waste materials will be stored in bins or other receptacles in designated, easily accessible locations.
- Waste leaving the site will be transported by suitable permitted contractors and taken to suitably permitted/licensed facilities.
- Where necessary, waste leaving the site will be recorded and copies of relevant documentation maintained.
- Where necessary, waste from the development will be segregated and stored in designated centralised waste storage areas on site.

These mitigation measures will ensure the operational waste generated by the development is dealt with in compliance with the provisions of the Waste Management Acts 1996 to 2013, the Litter Act of 1997, and the Eastern-Midlands Region (EMR) Waste Management Plan 2015-2021, and that optimum levels of waste reduction, re-use and recycling are achieved.

5.4.3 Predicted Impacts of the Proposed Development

As with the construction phase, waste materials will be generated during the operational phase of the proposed development. Again, careful management of these, including segregation at source, will help ensure that

applicable local and national waste targets are met. It is expected that some waste (e.g. mixed non-recyclables) will still be required to be disposed of at landfill. Assuming appropriate on-site storage is provided, environmental impacts (e.g. litter and to a lesser extent contamination of soil or water, etc.) arising from waste storage are expected to be minimal. The use of suitably licensed waste contractors will ensure compliance with the relevant legal requirements and appropriate off-site management of waste.

In summary, it is envisaged that the environmental impact of the development's operational phase will be long-term and slight with respect to waste management.

6.0 TRAFFIC MANAGEMENT

6.1 Access to the Site

Construction traffic will access the site from the adjoining street network. Greenhills Road provides easy access to N81 which provides access to the M50 for deliveries and extraction to and from the site.

6.2 Vehicle Movements During Construction

The major construction items include excavation, basement and superstructure construction and fit out. It is anticipated that the peak of HGV movements to and from the site will be during excavation works and construction of the foundations. The peak LGV movements to and from the site will be during the superstructure construction. It is anticipated that the construction traffic impact on the surrounding local road network to the proposed development site will be minimal.

The Contractor must submit a Construction Traffic Management plan to the Local Authority for approval. Haulage vehicle movements should be fully coordinated to comply with the requirements of the Layout and requirements herein.

At no time should construction associated vehicles be stopped or parked along the routes.

- Haulage vehicles should not travel in convoys of greater than two vehicles at any time;
- Haulage vehicles should be spaced by a minimum of 250m at all times;
- Strictly at no time should haulage vehicles be parked or stopped at the entrance to the site;
- All loading of excess material will occur within the site boundary;

- All off-loading of deliveries will take place within the site, away from the public road and will access via the construction site access.

The routes to and from the site shall depend on where the excavated material will be taken to and from where construction material will be brought into the site. The above locations will be identified by the Contractor at a later stage and appropriate routes will be agreed with South Dublin County Council as part of the Contractors more detailed construction management plan.

The increase in traffic as a result of construction will be minor and can be readily accommodated within the existing road network. However, the site is located in an urban area where restricted road and junction space is shared with vulnerable road users and the flow of construction traffic will need to be marshalled and regulated to ensure that potential conflicts are avoided as much as possible.

6.3 Minimising Construction Vehicle Movements

Construction vehicle movements will be minimized through:

- Consolidation of delivery loads to/from the site and manage large deliveries on site to occur outside of peak periods;
- Use of precast/prefabricated materials where possible;
- 'Cut' material generated by the construction works will be re-used on site where possible, through various accommodation works;
- Adequate storage space on site will be provided;
- A strategy will be developed to minimise construction material quantities as much as possible;
- Construction staff vehicle movements will also be minimised by promoting the use of public transport.

The following headings identify some of the measures to be encouraged

6.3.1 Cycling

Cycle parking spaces will be provided on the site for construction staff, in addition lockers will be provided to allow cyclists to store their clothes.

6.3.2 Public Transport

Construction staff will be encouraged to use public transport as means to travel to and from the site. An information leaflet will be provided to all staff as part of their induction on site highlighting the location of the various public transport services in the vicinity of the construction site.

6.4 Public Roads

A Visual Condition Survey (VCS) will be carried out of all surrounding streets prior to any site works commencing. The Contractor will liaise with SDCC Roads & Traffic Department to agree any changes to load restrictions and construction access routes for the site. Measures will be put in place as required to facilitate construction traffic whilst simultaneously protecting the built environment.

All entrances and temporary roads will be continuously maintained for emergency vehicle access.

The following measures will be taken to ensure that the site, public roads and surroundings are kept clean and tidy:

- A regular program of site tidying will be established to ensure a safe and orderly site;
- Scaffolding will have debris netting attached to prevent materials and equipment being scattered by the wind;
- Food waste will be strictly controlled on all parts of the site;
- Mud spillages on roads and footpaths outside the site will be cleaned regularly and will not be allowed to accumulate;

- Wheel wash facilities will be provided for vehicles exiting the site;
- In the event of any fugitive solid waste escaping the site, it will be collected immediately and removed.

6.5 Project Specific Traffic Management Plan

A detailed project specific traffic management plan will be developed by the Contractor and agreed with SDCC and an Garda Síochána prior to works commencing on site. This plan will be updated as required throughout the project.

Issues addressed in the Traffic Management Plan will include:

- Public safety
- Construction traffic routes
- Deliveries' schedule
- Special deliveries (wide and long loads)
- Traffic flows
- Signage and lighting
- Road opening requirements
- Road closures
- Lighting

A liaison officer will be appointed as a point of contact with local residents, South Dublin County Council and the Gardaí.

7.0 PROVISIONS FOR CONSTRUCTION

7.1 Hoarding, Set-up of Site & Access/Egress Points

The site area will be enclosed with hoarding details of which are to be agreed with South Dublin County Council. Hoarding panels will be maintained and kept clean for the duration of the project.

This will involve erecting the hoarding around the proposed site perimeter in line with the finished development description.

7.2 Removal of Services

Prior to any works a utility survey will be carried out to identify existing services. All services on site will be disconnected, diverted or removed as agreed with service providers.

7.3 Excavation

This development will involve excavation and removal of material from site for foundations and regrading of the site profile.

It is not envisaged that rock will be encountered during the excavation works.

The Contractor must prepare a Construction and Demolition Waste Management Plan in accordance with the *"Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects"* (Department of Environment, Heritage and Local Government, 2006) and ensure that all material is disposed of at an appropriately licensed land fill site. The Contractor must also outline detailed proposals within the Construction Management Plan to accommodate construction traffic.

7.4 Superstructure

The construction of the superstructure will involve complex sequencing of activities and various construction methodologies could be adopted to deliver the Contract. It is envisaged that the building could be constructed as an in situ concrete frame subject to change in detail design stages. The façade may consist of a unitised system to limit the extent of scaffold required, or a more traditional 'stick' system.

As noted the construction methodology and therefore the programme of the construction activities will be dictated by the Contractor.

The following outlines a general construction sequence for the superstructure:

Building Structure:

- Construction of the foundations and ground floor slab
- Construction of rising elements to Level 0 and construction of Level 0 floor slab
- Similar sequence of construction of rising elements and floor slabs

Envelope / Cladding:

- Commencement of envelope works to Level 1 when structure has progressed to approximately Level 2/3
- Advancing of Cladding two or three levels behind the structure

Mechanical & Electrical fit-out:

- First fix will commence at each level behind structure
- This will be followed by the second fix and the final connections

Fit-out:

- Initial installation of stud work when cladding is complete and floor is weather tight
- Installation of equipment and associated connection to services;
- Completion of finishes

Commissioning:

- The final commissioning period will commence during fit-out

The above is an indicative construction sequence. The final sequence will be dictated by the Contractor. The Contractor must issue a detailed construction programme outlining the various stages prior to commencement of works.

7.5 Erection and operation of cranes

It is envisaged that one tower cranes will be temporarily erected to accommodate the construction works for the distribution of reinforcing steel, concrete skips, concrete formwork element and general building materials. The Contractor will need to obtain all necessary licences from the Local Authority. A "mast climber" maybe installed at some local areas to facilitate particular façade features. The mast climber is essentially a climbing platform that allows the user safely access any level without the requirement for a full scaffold tower.